

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/079243 A2

(51) International Patent Classification: **Not classified**

(21) International Application Number:
PCT/US2005/003910

(22) International Filing Date: **7 February 2005 (07.02.2005)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
60/542,499 6 February 2004 (06.02.2004) US
60/581,945 22 June 2004 (22.06.2004) US

(71) Applicant (for all designated States except US): **UNIVERSITY OF VIRGINIA PATENT FOUNDATION** [US/US]; 250 West Main Street, Suite 300, Charlottesville, VA 22902 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GILMER, Linda** [US/US]; 3 Jade Court, Palmyra, VA 22963 (US). **MANDAL, Arabinda** [IN/US]; 600 Brandon Avenue, #32, Charlottesville, VA 22903 (US). **WOLKOWICZ,**

Michael, J. [US/US]; 2607 Hydraulic Road Apt E, Charlottesville, VA 22901 (US). **KLOTZ, Kenneth, L.** [US/US]; 4737 Green Creek RoadLane, Schuyler, VA 22969 (US). **HERR, John, C.** [US/US]; 895 Old Ballard Road, Charlottesville, VA 22901 (US).

(74) Agent: **SPARKS, Rodney, L.**; University of Virginia Patent Foundation, 250 West Main Street, Suite 300, Charlottesville, VA 22902 (US).

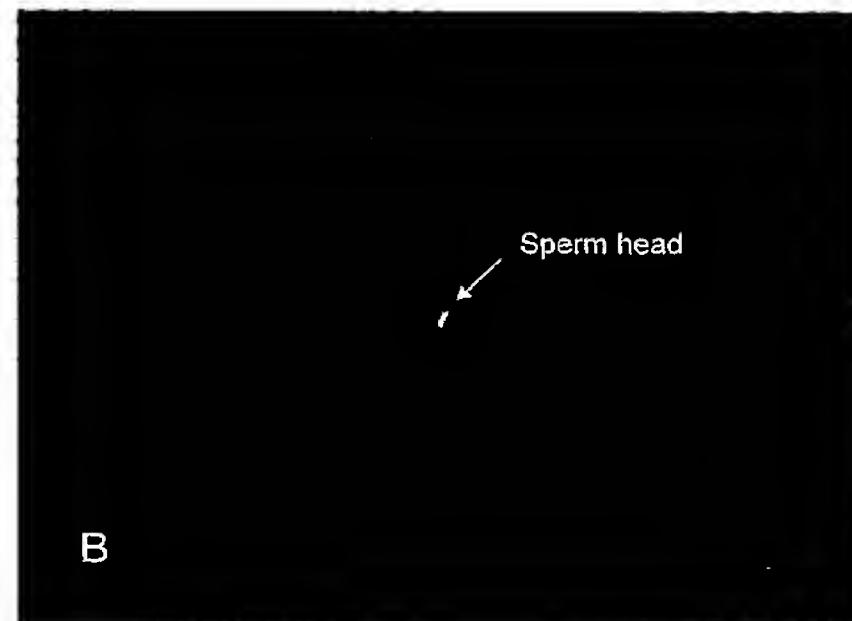
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: COMPOSITIONS AND METHODS FOR IDENTIFYING SPERM FOR FORENSIC APPLICATIONS

ESP mAb 3C6 conjugated to AlexaFluor 488
identifies sperm head in post-coital sample eluted from cotton swab.



Phase contrast (A) and immunofluorescent image (B). Anti-ESP mAb stains the equatorial segment of a sperm eluted from a post coital sample. The equatorial segment staining pattern is a distinctive band across the mid-region of the sperm. Other biological material in this field is not stained with the antibody so that the sperm head is clearly visible against a dark background.

The post coital sample was collected with a cotton swab one hour after intercourse, dried and stored at 4°C for approximately two years. Swabs were rehydrated with PBS. Cells and other material released from swab were spotted on microscope slides and stained with fluorescently labeled antibody according to standard protocol (see appendix).

WO 2005/079243 A2

(57) Abstract: Methods and compositions for identifying and isolating sperm cells from samples containing multiple cell types are described. The methods and compositions employ antibodies that specifically bind to sperm-specific antigens located on or internal to the sperm plasma membrane. A reporter molecule may be conjugated to the antibodies to aid in the detection of sperm. The antibodies may be targeted to sperm-specific antigens in the head and/or tail of sperm to facilitate the identification and isolation of sperm cells from forensic samples prepared from sexual assault evidence. Purified DNA from the isolated sperm cells can be amplified by polymerase chain reaction to assist forensic analysis in sexual assault cases.



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *without international search report and to be republished upon receipt of that report*